

REMARKS/ARGUMENTS

Claims 1-41 are pending in the application. Claim 41 has been amended to correct a typographical error in the dependency of that claim such that it now depends on claim 39 rather than on itself (i.e., no. 41). Furthermore, claims 37 & 38, written as “Use” claims, have been canceled from the application without prejudice or disclaimer and replaced with method claims 42-43. No new matter is added by any of the revisions to the claims and entry of this Amendment into the file of the application is, therefore, respectfully requested. Upon such entry, claims 1-36 and 39-43 will be pending in the application.

Claim Objections

According to p. 2 of the Office Action, claims 4 and 8-40 are objected to under 37 C.F.R. 1.75(c) as being in improper form because a multiple dependent claim shall not serve as a basis for any other multiple dependent claim, citing to MPEP §608.01(n). This ground of objection is respectfully traversed.

The Examiner’s attention is respectfully directed to the fact that the present application was filed with a Preliminary Amendment wherein the claims were amended to remove all of the multiple dependencies. Thus, each dependent claim currently pending depends from only 1 previous claim. Applicants believe that the Examiner may have inadvertently overlooked the Preliminary Amendment, which led to his objecting to the claims. However, based on the information provided above, the Examiner is respectfully requested to reconsider and withdraw the claim objection based on MPEP §608.01(n).

Claim Rejections Under 35 U.S.C. §112

Claim 41 is rejected under 35 U.S.C. 112, second paragraph for indefiniteness. Due to a typographical error, the claim depends upon itself. Therefore, applicants have amended the subject claim to correct the error such that, as amended, the claim now depends upon claim 39. The amendment to correct the typographical error in claim 41 adds no new matter and it is believed to overcome the ground for rejection under §112. The Examiner is, therefore, respectfully requested to reconsider and withdraw the §112 rejection of claim 41.

Claim Rejections Under 35 U.S.C. §102

Claims 1-41 are rejected under 35 U.S.C. §102(b) as being allegedly anticipated by U.S. Patent No. 5,624,486 to Schmidt et al. as described at pp. 3-5 of the Office Action. For the reasons which follow, the rejection is respectfully traversed.

Claim 1 of the present application is written in independent form and is directed to applicants' effect pigments. The claim thus recites effect pigments having an aluminum core or an aluminum alloy core and an aluminum oxide-containing or aluminum oxide/hydroxide-containing layer enveloping the aluminum core or aluminum alloy core, obtained by chemical wet-process oxidation of lamellar aluminum pigments or aluminum alloy pigments, the content of metallic aluminum in the aluminum core or aluminum alloy core being not more than 90 % by weight, based on the total weight of the pigment, wherein the oxidized aluminum pigments or aluminum alloy pigments exhibit at least one highly refractive metal chalcogenide layer having a refractive index of > 1.95 , and a mixed layer is formed between the highly refractive metal chalcogenide layer and the enveloping aluminum oxide-containing or aluminum oxide/hydroxide-containing layer.

Furthermore, claim 28 of the present application recites a process for the production of effect pigments as described in the paragraph above, comprising: (a) oxidizing aluminum pigments or aluminum alloy pigments which are suspended in a liquid phase containing organic solvent, using an oxidizing agent, and (b) applying at least one metal chalcogenide layer having a refractive index of > 1.95 onto the pigments oxidized in step (a), during which process a mixed layer forms between the metal chalcogenide layer and the aluminum oxide/hydroxide layer.

In response to the rejection under §102(b), applicants submit that the effect pigments of the present invention are obtained by a chemical wet process oxidation of an aluminum core or an aluminum alloy core. As described on p. 8, first full paragraph of the English translation of applicants' specification the produced aluminum oxide/hydroxide layer grows, in part, into the core and, in part, on the core, resulting in a severely roughened surface structure that can be seen by electron microscopy. As further described in the indicated paragraph, the strongly roughened surface causes greater scattering of incident light in comparison with smooth metal surfaces which, in turn, leads to the surprisingly soft color flop of the effect pigments of the present invention.

In contrast, in the cited reference, the substrate particles are wet-chemically-coated, i.e., they are not oxidized as recited in the present claims to applicants' pigments and method, by hydrolytic decomposition of organic aluminum compounds (see, e.g., Col. 1, lines 15-22 of Schmidt et al.). Moreover, further in contrast with the present invention, the applied layers as taught in Schmidt et al. all have a uniform, homogeneous and film-like structure (see Schmidt et al. Col. 5, lines 18-22).

Stated differently, therefore, the process for obtaining the pigments as claimed by applicants, comprising a step of wet oxidation of an aluminum core or aluminum alloy core, differs significantly from the process disclosed in Schmidt et al. according to which the aluminum oxide is applied by hydrolytic decomposition of organic aluminum compounds. Thus the methodology of obtaining applicants' pigments is recited in, *inter alia*, the claims to the pigments themselves. Furthermore, due to the differences described above, the pigments according to the present invention differ structurally from those according to Schmidt et al. That is, the aluminum oxide layer of the pigments of the present invention has a strongly roughened structure comprising pores due, inherently, to the method of its manufacture, which are produced by hydrogen gas separated in the chemical wet process oxidation, which forces its way through the resulting aluminum oxide or hydroxide layer (see present application, p. 8 lines 18-29), whereas the pigments disclosed in Schmidt et al. have uniform, homogeneous and film-like layers of aluminum oxide.

As set forth in the present application, the strongly roughened layer structure of applicants' pigments results in a soft color flop so that the optical properties of the effect pigments of the present invention and the effect pigments taught by Schmidt et al. differ significantly from one another in their optical appearance.

For the reasons above, therefore, applicants submit that the cited reference does not teach each and every element of their pigments and method as presently claimed and, thus, the Examiner is respectfully invited to reconsider and withdraw the rejection of the present claims under §102.

Moreover, further to the above, although no rejection under §103 based on the Schmidt et al. reference is presently pending, applicants submit for the record that the pigments and methods recited in the claims of their application are also not obvious over the disclosure contained in the

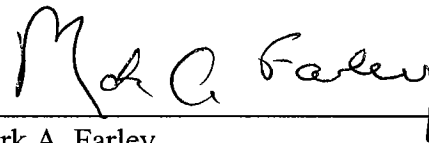
reference. That is, one having ordinary skill in this art would have to proceed directly against the teaching provided in Schmidt et al. advising them to apply uniform, homogeneous, film-like layers on the substrate pigments using metal-organic materials which are to be hydrolyzed when coating the substrate pigments. Applicants respectfully submit that one having ordinary skill in this art, starting with the teachings provided in Schmidt et al., would not be motivated to replace the wet-chemical-coating step taught therein with a wet-chemical-oxidation step as practiced in the present invention and as recited in the present claims. Further, there would be no motivation to, thus, produce strongly roughened aluminum oxide layers directly on the aluminum or aluminum alloy core, in accordance with applicants' claims, but to, instead, provide a coating of uniform, homogeneous and film-like aluminum oxide/hydroxide layers on a substrate pigment as practiced by Schmidt et al.

Summary

For all the reasons above, applicants respectfully submit that they believe that this application is now in condition for allowance, early notice of which would be appreciated. If the Examiner does not agree, however, and believes that an interview would advance the progress of this case, he is respectfully invited to telephone applicants' representative at the number below in order that such an interview may be arranged.

Respectfully submitted,

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